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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/690,900	10/22/2003	Jacobus Johannes Cornelis Geerlings	TS1288 (US)	6359

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SHELL OIL COMPANY
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EXAMINER

HENDRICKSON, STUART L

ART UNIT	PAPER NUMBER
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1793

MAIL DATE	DELIVERY MODE
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10/24/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/690,900	Applicant(s) GEERLINGS ET AL.	
	Examiner Stuart Hendrickson	Art Unit 1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10/1/07.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Art Unit: 1793

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action. The RCE is accepted.

Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over EP '744 taken with JP '153.

EP '744 teaches, in columns 4 and 6 especially, purifying carbon dioxide by desorbing from an amine at elevated temperature. The elevated pressure expected is noted as well. The temperature and pressure overlaps the claimed ranges, rendering them prima-facie obvious. This differs in not teaching the claimed use of the carbon dioxide. '153 teaches in the abstract treating fine silicate particles (size overlapping the claimed range) with carbon dioxide. Using the purified CO₂ of '744 in the JP process is an obvious expedient to provide carbon dioxide to a process needing it; note *In re Kamlet* 88 USPQ 106.

Concerning claim 2, using heat exchange is an obvious expedient to optimize economic efficiency by reducing heating costs. Concerning claim 13 and the like, using a high temperature to carbonate is an obvious expedient to make the reaction go faster.

Applicant's arguments filed 10/1/07 have been fully considered but they are not persuasive.

EP '744 suggests the use of off-gassed carbon dioxide in sequestration. JP '153 is one of such sequestration methods, as evidenced by the references submitted on this technique. It is an obvious expedient to use heat from one step if it is needed in another step, particularly under the rubric of energy conservation and 'going-green'. The examiner agrees that the present process is relatively inefficient versus for example direct adsorption of gas by a solution of CaO. However, this does not detract from the combination of references to meet what is claimed.

Any inquiry concerning this communication should be directed to examiner Hendrickson at telephone number (571) 272-1351.



Stuart Hendrickson
examiner Art Unit 1754